

INPUT METHOD AND ARRANGEMENT FOR PORTABLE ELECTRONIC DEVICE

FIELD OF THE INVENTION

[0001] The present invention relates to input methods and arrangements and more particularly to an input method and an input arrangement for a portable electronic device with improved characteristics.

BACKGROUND OF THE INVENTION

[0002] The Internet and communications technologies have known a rapid, spectacular development in recent years. A wide variety of devices for the Internet and communications are commercially available constantly. Further, these devices are widely used in our daily life and work. Such trend not only increases the speed and the efficiency of information communications but also brings a lot of convenience to our life and work.

[0003] A wide variety of portable electronic devices are commercially available as electronics makes progress significantly. These portable electronic devices include, but not limited to, a number of consumer electronic products such as PDAs (Personal Digital Assistants), mobile phones, and pocket PCs. These products are compact, slim, lightweight, and inexpensive. Further, a number of additional features are added into the products. Thus, the current consumer electronic products not only have a number of conventional features including mobile phone and electronic notebook but also have a number of advanced wireless data communications features including high speed access to the Internet, video game downloading, and e-shopping. In brief, the past illusive Internet and wireless communications services finally come true and these services are further constantly provided to most people in their daily life and work.

[0004] Additionally, science and technologies have made progress significantly in recent several decades with living quality improved accordingly. This in turn causes more people to pay attention to their living condition and working environment. In fact, for a mobile user the above portable electronic devices are more portable as compared with notebook computers. Further, the portable electronic devices are easy to operate, can provide financial, banking, and living information, and can serve as a PIM (personal information management). Furthermore, the portable electronic devices have features including schedule, notebook, address book, calculator, and interconnecting a PC and a notebook computer for communicating data in duplex. For a latest type of PDA, it can connect to a mobile phone by wireless, access to the Internet for retrieving information from millions of sources, and receive data from GPS (Global Positioning System).

[0005] A new type of the portable electronic device is a pocket PC phone. A user may operate the pocket PC phone in one of two modes as detailed below. The first one as the dominating operating mode of the pocket PC phone involves operating a touch screen thereof. The second mode as a quick auxiliary operation involves operating a navigation button thereof. However, both hands are required to achieve any single operation of the pocket PC phone.

[0006] Another new type of portable electronic device is a smart phone. A user can use one hand to operate the smart phone. Thus, a user can conveniently operate the smart phone. However, a user has to use two hands to achieve a

single operation of the pocket PC phone. This is not desired. For example, a user wants to dial by means of the pocket PC phone. However, for the pocket PC phone such simple routine dialing operation cannot be done by one hand. This is because no numeric keypad for single hand operation is provided on the pocket PC phone. As a result, its operation is troublesome.

[0007] Additionally, the navigation button of the pocket PC phone is shaped as a square. The navigation button comprises four direction keys and a central confirmation key (e.g., "OK" key). However, the navigation button is not sensitive to touch since it is a mechanical device.

[0008] In view of the above, the inventor is aware of the problem and is dedicated to meet market needs. The inventor thus spends a lot of time on the improvement of the navigation button of the pocket PC phone. A result of my research and development is the incorporation of a touch sensitive rotary unit into the navigation button. The touch sensitive rotary unit can be manipulated in a manner similar to manipulating dial of a typical telephone. Thus, a user can dial by means of a single hand. Advantageously, manufacturers of the art can have an edge in this competitive market by manufacturing the device and using the method disclosed by the invention. These are the causes of the invention.

SUMMARY OF THE INVENTION

[0009] After considerable research and experimentation, an input method and an input arrangement for a portable electronic device according to the present invention has been devised so as to overcome the above drawback of the prior art (i.e., for the pocket PC phone a simple routine dialing operation is required to be done by both hands, and this is more inconvenient and less desirable as compared with the smart phone) and bring convenience to vast users.

[0010] It is an object of the present invention to provide a touch sensitive rotary unit to a control button of a portable electronic device (e.g., a pocket PC phone connectable to a mobile phone) such that a user can use a single hand dialing operation to input numerals, characters, or text.

[0011] To achieve the above and other objects, the present invention installs a software in the portable electronic device such that running the software to cause the portable electronic device to enter a disk dialing mode will show a virtual disk on a screen on a phone body of the portable electronic device wherein the virtual disk includes a plurality of fixed marks along its periphery, each of the fixed marks representing a numeral, a character, or a letter. Further, inputting a movement signal by manipulating a control button on the phone body will move a moving mark on the periphery of the virtual disk from the fixed mark labeled as an origin to a location desired by a user along the fixed marks. Furthermore, a corresponding one of the fixed marks is activated to generate a corresponding numeral, character, or letter. Then the moving mark returns to the fixed mark labeled as an origin after traversing the periphery of the virtual disk. As an end, the purpose of dialing operation is achieved.

[0012] The above and other objects, features and advantages of the present invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1 is a top plan view of a preferred embodiment of portable electronic device according to the invention; and